

M&M's Community and Geo-Spatial Thinking

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Purpose: To ease the students into the basic concepts of geo-spatial thinking, an activity utilizing a white sheet and M&M's will engage interest and make a connection between existing knowledge, layers of data, and real-life geo-technology possibilities.

Grade Level(s): 4-12

National Geography Standards:

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
18. How to apply geography to interpret the present and plan for the future.

Indiana Social Studies Academic Standards:

Fifth Grade: Individuals, Society, and Culture – 5.5.6

Sixth Grade: Geography – 6.3.2

Seventh Grade: Geography – 7.3.3; Individuals, Society, and Culture – 7.5.4 (focusing on geo-spatial technologies in the late 20th century and the 21st century)

Eighth Grade: Geography – 8.3.11 (expand this activity to focus on specific standard goals); Individuals, Society, and Culture - 8.5.7

High School: World Geography – 1.3, and 1.4

Objectives:

Upon completion of this activity, students will be able to...

1. create a two-dimensional map highlighting at least four pieces of data (layers of information),
2. review the basic components of a map (title, orientation, theme, author, legend, scale),
3. discuss the relationship between hand-cartography and 21st century cartography specifically comparing data collection, data manipulation, and data presentation,
4. give examples of geographic (spatially distributed) data (layers of information); ie., sewer lines, street lights, schools, grocery stores, libraries, bus stops,...),
5. identify GIS (Geographic Information Systems) and briefly explain the term: information technology systems used to store, analyze, manipulate, and display a wide range of geographic information,
6. state at least one way in which GIS has impacted society in the 21st century, and
7. give one example in which GIS may facilitate problem solving in their local community.

Materials Required:

- One white twin sheet
- One large bag of multi-colored M&M's
- Pencils for each student
- White drawing paper for each student

Teacher Preparation: Place a random number of M&M's (red, green, blue, yellow, orange, brown) into small baggies.

Procedures:

1. Place the white sheet onto the floor of the classroom.
2. Hand each bag of M&M's to a student.
3. Discuss with the students that they will be gathering geographic (spatial) information about a community to answer the question, "Does slow storm drainage cause difficulty in reaching either area parks or medical facilities?" Six pieces of information have been requested by the local M&M Planning